

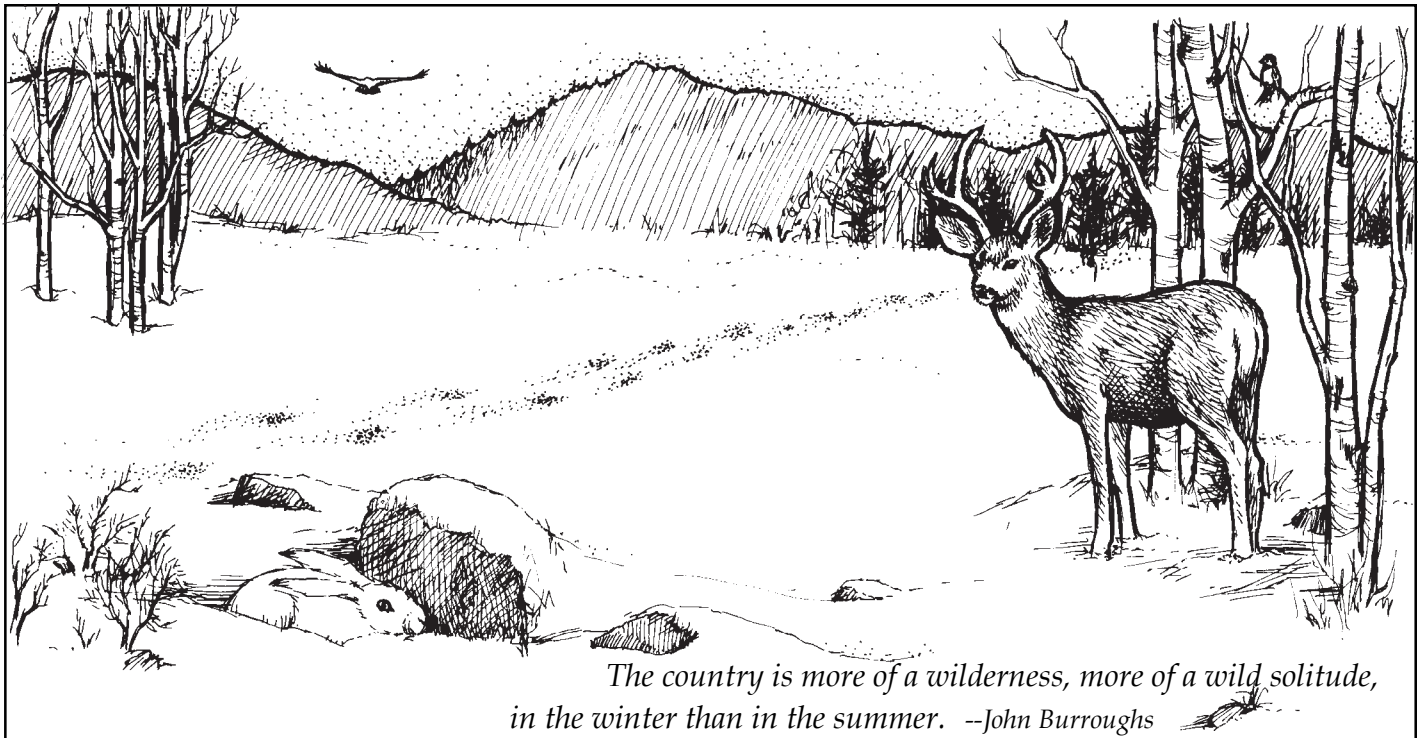
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# Growing WILD

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Utah's Project WILD Newsletter

Winter 1993



*The country is more of a wilderness, more of a wild solitude,  
in the winter than in the summer. --John Burroughs*

## Utah's Winter Range

# A Winter Web of Wildlife

*The high temperature on a typical January day in Utah's northern mountains is near 30°F; the nighttime temperatures frequently reach -5°F; and snow depth can range from 6 to 10 feet.*

These winter conditions are met in different ways by different animals. Some animals avoid winter altogether by either migrating to warmer areas or by hibernating, while others stay the winter in areas directly impacted by cold and snow.

For animals to survive through the cold winter, they must maintain a balance between energy loss and energy gain. Cold temperatures cause energy loss, and both cold and snow make it difficult for animals to acquire food for energy. Some animals cannot replace the energy they're losing, so these animals face starvation.

Winter range in Utah is generally thought of as winter habitat that is critical to the survival of our big game species. However, Utah's winter range, providing critical forage and cover for warmth and protection, benefits many other wildlife species in addition to big game species.

This issue of *Growing WILD* explores various aspects of Utah's winter range and some of the many animals which depend on it for survival.

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## *Healthy Habitat Crucial for Winter Survival*

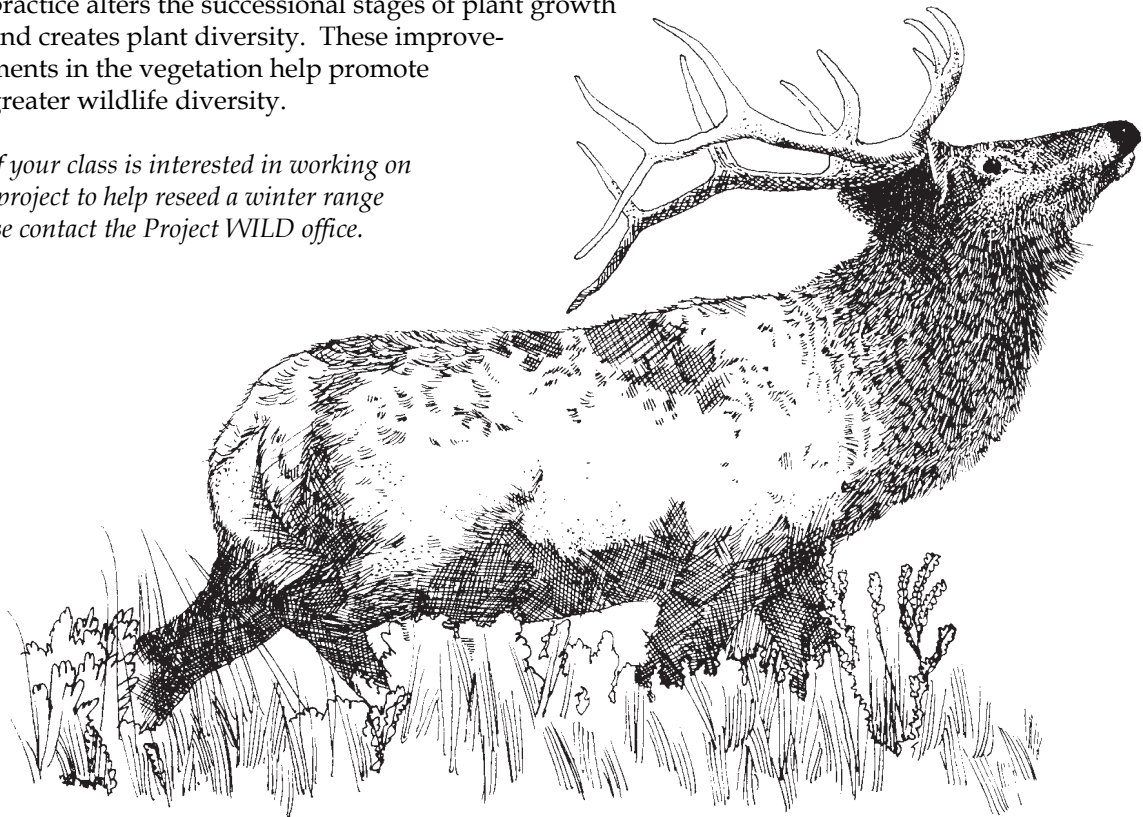
Availability of winter range is crucial for all eight species of big game found in Utah: elk, moose, mule deer, Rocky Mountain bighorn sheep, desert bighorn sheep, mountain goats, antelope and bison.

During the cold snowy months, the most important limiting factor for these animals is the availability of good forage (food sources) and cover (shelter). About 10% of big game animals die while on their winter range, usually from starvation and the cold weather. Some big game animals, primarily deer and elk, are taken by predators, typically mountain lions; but moose predation is not significant.

Each year, wildlife biologists carefully assess the condition of wintering areas for big game animals and make decisions affecting these areas in order to provide adequate forage and cover. Some of the actions they may take include:

- assessing the carrying capacity (or how many animals the winter range can support). Carrying capacity changes annually depending on availability of forage and cover. Drought conditions in the past few years have seriously affected winter range areas in Utah. When wildlife managers recommend the number of animals that can be successfully hunted, they consider how many animals the winter range can support.
- protecting the winter range from uses which compete with big game species. Wildlife managers often encourage other users to restrict use of wintering areas while big game species are present. These restrictions might include curtailing the use of winter recreational vehicles or limiting projects such as oil and gas exploration.
- reseeding or clearing the area to allow for revegetation. This practice alters the successional stages of plant growth and creates plant diversity. These improvements in the vegetation help promote greater wildlife diversity.

*If your class is interested in working on an action project to help reseed a winter range area, please contact the Project WILD office.*



# *Hardware Ranch Offers Educational Programs for Winter Wildlife Viewing*

Several hundred Rocky Mountain elk have gathered for the winter at Hardware Ranch, 15 miles east of Hyrum at the top of Blacksmith Fork Canyon. This 25,000 acre northern Utah wildlife management area, owned and operated by the Utah Division of Wildlife Resources, provides critical winter habitat for wildlife and serves as a winter feeding site for elk. Mule deer, moose, bald eagles, red-tailed hawks, forest grouse and many other wildlife species are often seen during a winter visit to Hardware.

For school visits to Hardware Ranch, contact Shelly Woolstenhulme at 336-2119. Call after 5 p.m. or leave a message for her to return your call. School groups must make reservations for the 20 minute horse-drawn sleigh ride out among the elk and a natural history program at the visitor's center. The discounted charge for school groups is \$1 per person, and school groups may include elementary and secondary students, scout groups and home schoolers. Hardware Ranch personnel are prepared to present natural history programs on elk and habitat, or you may ask about other topics that might supplement your study areas.

*If you're interested in visiting Hardware Ranch on your own, you may call 245-3131 for recorded information.*

## **BERGMANN'S RULE**

Individuals of the same animal species are larger in cooler climates.

## **ALLEN'S RULE**

Animal extremities (ears, bills, tails) in a given species are smaller in cooler climates.

Both of these rules describe adaptations which reduce energy loss to a cold environment. The skin of an animal is one of the primary heat loss routes. Increase in body size and reduction of extremities will give an animal a smaller surface area to volume ratio, thus holding more heat for a given mass. If a rabbit and an elk are exposed to a freezing wind, which would cool faster? Why?

If you plan on studying elk in your classroom, you may be interested in receiving the following free materials from the Project WILD office (801 538-4719).

- **"Welcome to Hardware Ranch"** is an activity book for students in grades 3-6. Includes natural history information about elk, coloring pages, maze, word search, crossword puzzle and more. Students do not need to visit Hardware Ranch to benefit from this activity book.

- **Hardware Ranch Elk Poster**

- **Elk Wildlife Notebook Series** (available in February)

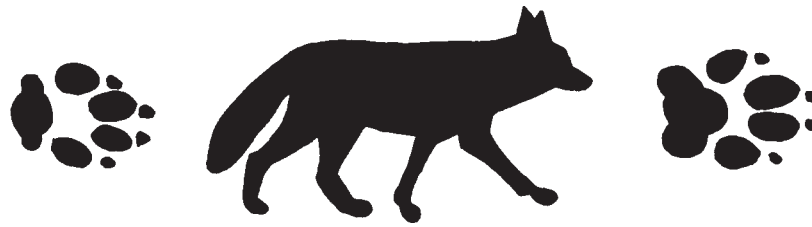
- **"Bugle"** is the journal published by the Rocky Mountain Elk Foundation, containing excellent natural history information and photographs. We have copies of the October 1992 issue which includes a detailed article on elk habitat and the animals that use it. The article "Learning about Habits and Habitat" is appropriate for use in grades 4-12. Supplies are limited.

*How does this relate to Bergmann's and Allen's rules?*

*Heat two liters of water to a boil and pour half into a liter canning jar and half into a large cake pan. Measure the temperature of both containers at the same time every five minutes and graph the results over 30 minutes. Which cooled faster? Why?*

*from Biologue, "Looking at Winter," Teton Science School, Winter, 1988.*





## *Big Game Connects Winter Web*

The winter web of energy often branches through big game animals. Without these large herbivores, other wild members of winter range communities could not survive. Consider the importance of one elk carcass. Compare the carcass to an energy bank. The elk, while alive, collected and stored the sun's energy. When the elk dies on the winter range, there is a transfer of energy from summer to winter. Since winter is a time of energy shortage, there are many animals that rely upon the stored energy in the elk's carcass. Ravens, coyotes and eagles are a few of the many animals which rely on this seasonal transfer of energy.

Many winter birds depend on large game animals. Magpies often are seen picking parasites off the backs of elk. Other birds are seen following herds of big game. These birds take advantage of big game clearing snow to graze. When the large mammals clear the snow from the frozen ground the winter bird residents move in to glean the available food.

Some winter range relationships are obvious. Mountain lions depend primarily on the energy deer bring to the winter range. Even coyotes will occasionally kill a weakened or yearling deer. Some relationships are less obvious. Coyotes have been known to follow elk as they graze. When an elk paws through the snow, it will occasionally flush a vole. The alert coyote will quickly pounce on the vole. Even the gopher benefits from large game on winter range. Gophers will gnaw the bones of a winter killed deer to gain important minerals. There are even reports of badgers burrowing under an elk carcass and using the carcass for both food and shelter. Now that is room service!

## *Tracks Tell the Tale*



*Nature's Call*, the Project WILD newsletter for kids, is included with this issue of *Growing WILD*. *Nature's Call* focuses on the deer family and asks students to use tracks to show animal behavior during the winter. As an extension to this activity, students might work together using tracks to create their own stories about animals in the snow. On the back page, students have a snowflake to use as a background for poetry.

We have a limited number of classroom sets of *Nature's Call* available for your use (Call the Project WILD office at 801 538-4719), or you may copy it as needed.

**PLEASE** -- send us some student work!! We would appreciate receiving a few samples to display on our WILD bulletin board in Salt Lake and to share with other teachers and Wildlife Resources personnel!

# "Eagles on the Rise"

Utah's Bald Eagle Day offers unique opportunities for students to view eagles on their wintering range and at the same time to study eagles as part of their core curriculum.

Teachers interested in bringing "eagles" into the classroom can use the Project WILD activities listed below by adapting them specifically to eagles.

In addition these activities may be used with the article on eagles in the November issue of *National Geographic*. The article, "Eagles on the Rise," highlights efforts to re-establish the eagle to its historical range in the southeastern United States and provides natural history information and photographs.



## **Bald Eagle Day February 6, 1993**

The Utah Division of Wildlife Resources again sponsors Bald Eagle Day with opportunities to view eagles at six sites across the state. For more information or to check on final sites, call Bob Walters, Special Projects Coordinator, at 538-4757. Current sites include: Willard Bay, Cudahy Lane and the Jordan River, Ophir Canyon, Green River Campground Overlook in Dinosaur National Monument, Quichipa Lake (west of Cedar City), and Gordon Creek (6 miles up the Consumer's Road).

### **MY KINGDOM FOR A SHELTER**

*Bald eagles mate for life and build up the same nest each breeding season. Capable of living 30 years or longer, bald eagles build some of the world's largest nests, weighing sometimes as much as two tons. Nests may be 7 to 8 feet across and 12 feet deep. Sticks are used as the foundation for the nest, and nests are lined with mosses, pine needles, grasses, feathers or other soft materials. Nests are usually found in tops of trees, sometimes 150 feet above the ground. Ask students to compare the weight and size of their model nest in proportion to an actual nest.*

### **MUSEUM SEARCH FOR WILDLIFE**

*Expand search beyond museums. Include variety of sources where reproductions of eagles are found.*

### **ENVIRONMENTAL BAROMETER**

*Visit a Bald Eagle Day viewing site. Discuss population trends with a Wildlife Resources representative at the site.*

### **HERE TODAY, GONE TOMORROW**

### **PLANTING ANIMALS**

*Describe how eagles have been reintroduced to the southeastern United States. In the West, eagles have re-established their populations without a formal reintroduction program. What could be the reasons for this?*

### **WILDLIFE IN NATIONAL SYMBOLS**

### **DEADLY LINKS**

*Use "eagles," "fish," and "invertebrates" to simulate food chain contaminated with DDT (see activity on pages 6-7).*

### **KEEPING SCORE**

*Reach beyond your neighborhood. Examine nearby habitat for wintering eagles in Utah.*

### **ETHI-REASONING**

*Use card specific to bald eagles. Ask students to create other dilemmas specific to human impact on bald eagles. Please send these to the Project WILD office so we may share them with other Project WILD teachers.*

### **FOR EXTENDED STUDY**

*Bald eagles are protected by state and federal laws. They are listed as an Endangered Species by the U.S. Fish & Wildlife Service and protected by the Endangered Species Act which was passed in 1973. This Act is currently under study for reauthorization. The Project WILD activities KNOW YOUR LEGISLATION: WHAT'S IN IT FOR WILDLIFE? and WILD BILL'S FATE encourage students to study current legislation and become involved in the legislative process.*



# To the Brink of Extinction and Back

Chemicals which we use usually end up in our water. For example, pesticides which we use on our crops, when it rains, wash into our rivers and lakes. Some chemicals may break down and disappear over time. Others do not.

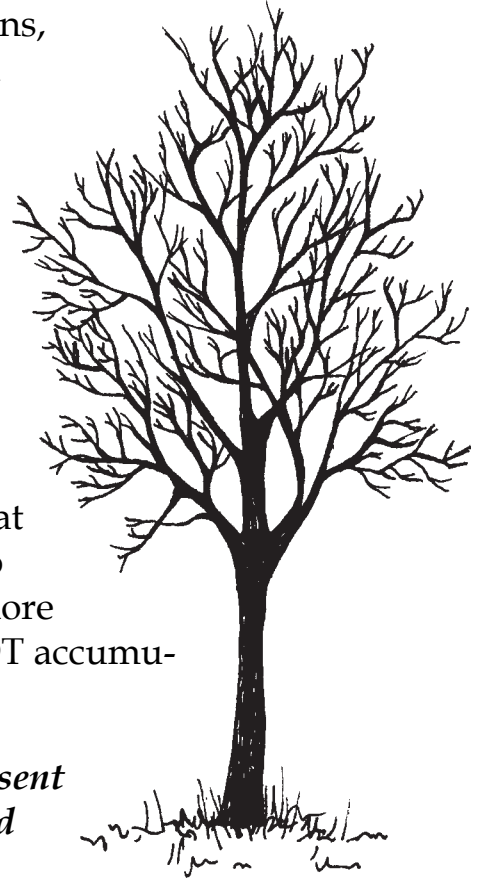
A chemical which is particularly bad for our environment is DDT. DDT was the most significant cause for declining bald eagle populations in the 1950s and 1960s. When DDT washed into our water sources, it stayed there for a long time.


The chemical was absorbed by aquatic insects and other invertebrates living in the water. It was then passed at ever increasing levels to minnows, larger fish and finally to birds. At each level of the food chain, the poisoning was more serious. The effects also grew worse over time because DDT accumulates in the fat cells of the animals that eat it.

*In the drawing to the right, add the dots which represent DDT to show how it accumulates in the minnow, trout and eagle.*

The poison DDT did not kill the eagles immediately. Instead, it caused them to lay eggs with very thin shells. When the parents tried to sit on the eggs to incubate them, the eggs broke. There were fewer and fewer baby eagles.

By the time the United States restricted use of DDT in 1972, the population of eagles had dropped from 50,000 in the contiguous United States to approximately 1,600. Although DDT is still used in some other countries, less DDT is entering food chains here in the United States. Now protected by the Endangered Species Act of 1973, bald eagles have steadily recovered and now number over 6,000.

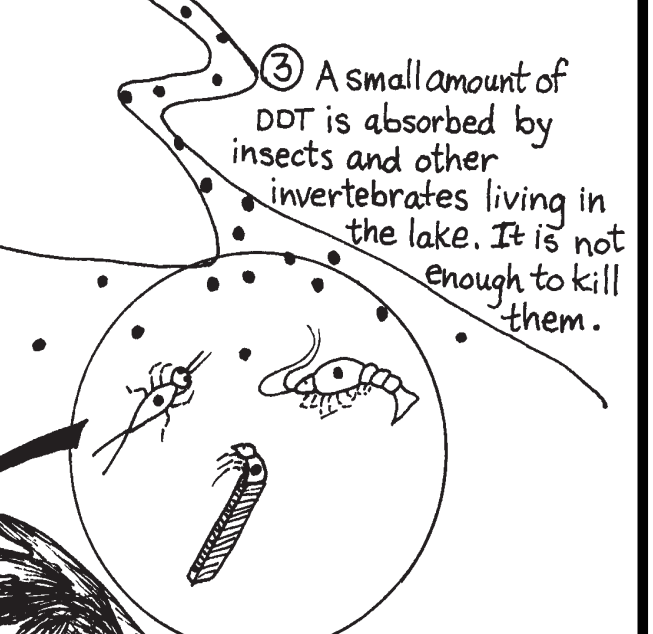




① DDT is sprayed on crops to kill insects that might eat them.


The diagram shows a field with crops being sprayed with DDT. A river flows nearby, and rain is falling, washing the DDT into the water.

② Rain washes the DDT into rivers which flow into lakes.



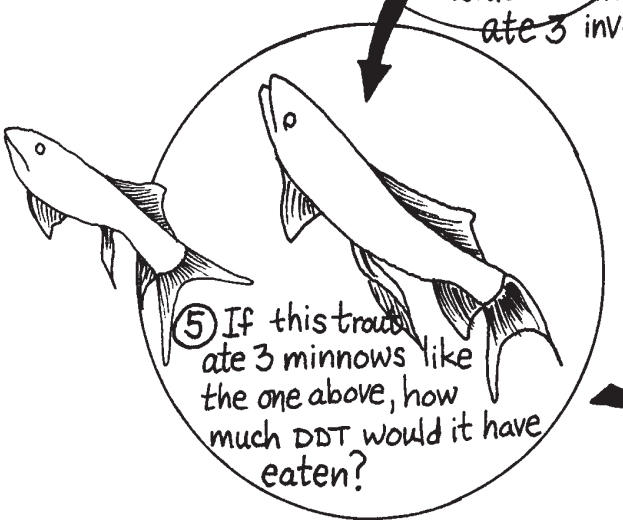
③ A small amount of DDT is absorbed by insects and other invertebrates living in the lake. It is not enough to kill them.

The diagram shows a lake with DDT dots. A circular inset shows a magnified view of the lake's surface with insects and invertebrates absorbing the DDT dots.




④ Draw the number of dots of DDT that would be inside this minnow if it ate 3 invertebrates.

The diagram shows a minnow in a circular inset. Arrows point from the lake's surface to the minnow, indicating the flow of DDT into the fish.



⑤ If this trout ate 3 minnows like the one above, how much DDT would it have eaten?

The diagram shows a trout in a circular inset. Arrows point from the minnows to the trout, indicating the flow of DDT into the fish.



⑥ If this eagle ate 3 trout, how much DDT would it have eaten?

The diagram shows an eagle in a circular inset. An arrow points from the trout to the eagle, indicating the flow of DDT into the bird.

This is the place... for eagles!



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*Utah is the winter home for more than 1,200 bald eagles. They usually winter near rivers, lakes and marshes, looking for unfrozen, open water in which to catch fish -- their most important food. In Utah, cottonwood trees along rivers, lakes and reservoirs are very important roosting sites for bald eagles. **The bald eagle in the drawing above has flown into Utah from Alaska looking for a place to spend the winter. Add some things to this scene that might make it want to stay.***





# *Raptors of Utah*

a wildlife education workshop  
about hawks, falcons, owls and eagles  
with an exciting field experience  
observing bald eagles  
and other raptors

## *Three Locations*

Tooele, February 5-6, West School  
Layton, February 19-20, Farmington Elementary  
Vernal, March 5-6, USU Education Center

Friday, 6:30-8:30 p.m.  
Saturday, 8:30 a.m.-4:30 p.m.

no charge for workshop  
credit available

Raptor information and activities  
will be correlated to state science  
core curriculum.

## *Live Birds*

Jo Stoddard, wildlife rehabilitator,  
is the guest lecturer.

*All teachers are invited to attend!*

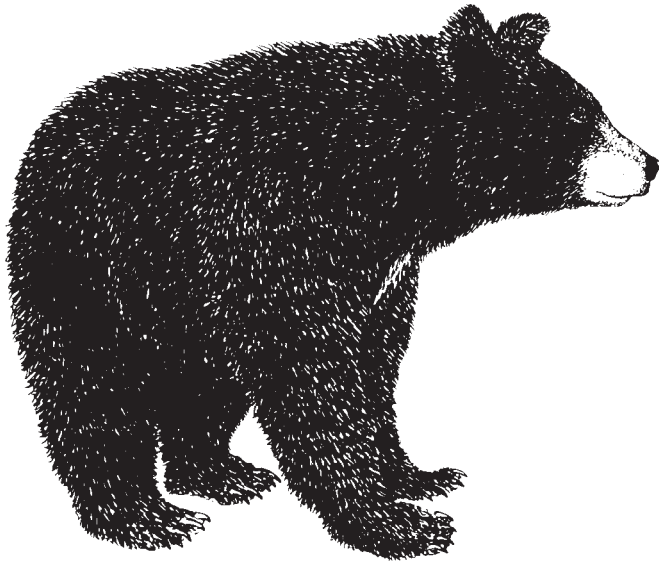
To register, return this form to Project WILD, 1594 West North Temple, Ste. 2110, Salt Lake City, UT 84116. Registration is limited to 40 participants. Call 801 538-4719 if you have any questions.

Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_

I want to attend the raptor workshop to be held at \_\_\_\_\_

# *The Great Bears Workshop*



a wildlife education workshop  
about black bears in Utah  
and grizzly bears in the West  
offering a unique opportunity  
to visit a bear den

**April 23-24, 1993**

**Friday, 6:30-8:30 p.m.**

**Saturday, 8:30 a.m.-4:30 p.m.**

central Utah location  
to be announced

no charge for workshop  
credit available

Materials and activities  
will be correlated to  
state science core curriculum.

*New Discover Utah Wildlife Poster  
with photograph of black bear  
available in February  
Contact the Project WILD office  
for your copy (538-4719)*

*guest presenters*

Jordan Pederson

Utah Division of Wildlife Resources

Vince Yannone

Montana Dept. of Game, Fish & Parks

*All teachers are invited to attend!*

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To register for The Great Bears Workshop, return this form to Project WILD,  
1594 West North Temple, Ste. 2110, Salt Lake City, UT 84116. Registration is limited to  
first 40 participants to register. Call 801 538-4719 if you have any questions.

Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

## Action

## "The Next 500 Years"

From the October 1992 issue of *Ranger Rick* magazine comes a charge for students to get involved! To get the next 500 years off to the right start, they recommend that kids become a key to making the earth a better place to live. Work together, identify the problems, research the issues, and network! Many groups already are established for major action projects. Here are some groups that *Ranger Rick* listed from around the country. Write to them for information and ideas.

**CAPE (Children's Alliance for Protection of the Environment)**, P.O. Box 307, Austin, TX 78767  
Group sponsors community cleanups and rain forest projects and publishes a newspaper by and for kids.

**EKO (Earth Kids Organization)**, P.O. Box 3847, Salem, OR 97302  
Chapters in different countries are connected by computer network so they can work together on worldwide problems such as global warming.

**Global Youth Network**, Ecology Council, H. Frank Carey High School, 230 Poppy Avenue, Franklin Square, NY 11010  
High school students set up this computer network for the United Nations Environment Program. It connects kids' environmental groups in more than 50 countries.

**Young Environmentalist's Action Network**, P.O. Box 7490, Boulder, CO 80306-7490  
Members receive information about urgent environmental problems and find out what they can do to help.

**K.O.P.E. (Kids Organized to Protect the Environment)**, Hawthorne School, Salt Lake City  
Initiate a club at your school like K.O.P.E. that can do action projects. Call Sheri Sohm at 481-4824 for more information.

High School students can now join a national network of action minded classmates. The Sierra Student Coalition is organizing for student action projects across the country. For more information call Mark Fraioli at 415 923-5514 or write the Sierra Student Coalition at 730 Polk Street, San Francisco CA, 94109.

## SCHOOLS WORK FOR HABITAT

The 1992 Project WILD and Ogden Nature Center Naturescaping grants have been awarded. The three hundred dollar grants will help students take action to increase wildlife habitat and wildlife study opportunities. If you are interested in networking with this year's recipients, contact the following people:

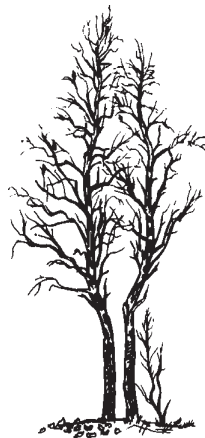
Kerry Bird, Westside Elementary  
Nebo District

Kay Gruis, Roosevelt Elementary  
Weber District

Kathie King, Rosslyn Heights  
Elementary, Salt Lake District

Pat Bown, Silver Hills Elementary  
Granite District

Gregory L. Shaw, Washington High  
Ogden City District



Lew Gardiner, Meadowlark Elementary  
Salt Lake District

Wendy Hellstern, North Park Elementary  
Cache District

Kayo Robertson, Millville Elementary  
Cache District

Macie Wolf, Mt. Ogden Middle School  
Ogden City District

Gary Young, Roy High School  
Weber District

For ordering seedlings from the Lone Peak State Forest Nursery, contact Project WILD for price sheets and instructions.

## Activities & Action

### Nest Boxes Available for Barn Owls

For a hands-on extension of OWL PELLETS, barn owl boxes are available for use in animal and hay barns in agricultural areas. Pat White, Native Species Manager for the Division of Wildlife Resources in the northern part of the state, has a limited supply. If your school is located near an area where barn owls live, contact the Project WILD office (538-4719) for a nesting box.

### Float the Colorado Looking for Eagles

Canyonlands Field Institute sponsors two Colorado River Eagle Float trips: February 27 and March 6. Contact them for more information at P.O. Box 68, Moab, UT 84532 (259-7750).

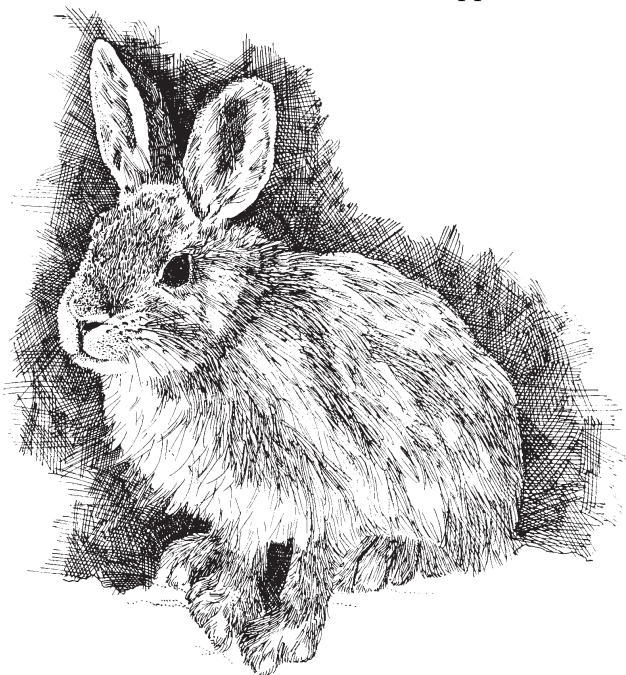
### Act in Harmony

Call 1-800-THE SOIL for an action packet that features a beautiful poster of Rodney Grant who portrayed "Wind in His Hair" in the movie *Dances With Wolves*.

Included in the packet is a coloring book, bumper sticker and action tips. Join the US Soil Conservation Service in their national campaign, **Project Harmony**, to protect the earth.

### Yellowstone Asks for Entries in IMAGINE YELLOWSTONE Contest

Focusing this year on the Greater Yellowstone ecosystem, Yellowstone National Park has announced its IMAGINE YELLOWSTONE art exhibit competition for students in grades 5 through 12. Any art medium, style, and size is acceptable; and creative writing entries may be poems or works of fiction no longer than one page. A slide program about this year's theme is available upon request. Contact the Project WILD office for more information and an application form. Deadline for entries is February 15.



### Wilderness Poetry Contest Deadline is February 15

Sponsored by the Utah Wilderness Association, this wilderness poetry competition seeks poems no longer than 40 lines, in any style and limited to themes of wilderness, its preservation, its life and values, or its spiritual nature. Contact the Project WILD office for a copy of the contest rules.

### More Activities for Eagles

Teaching packets about bald eagles are available with activity guide, activity sheets, bald eagle information and a poster, thanks to Wisconsin Department of Natural Resources. Appropriate for elementary and secondary levels. Call the Project WILD office for a copy.



## Resources

### "Join the Fold"

Students learn about wildlife through the art of origami with this booklet from Wisconsin Department of Natural Resources. Includes instructions for a frog, bat, swan, and butterfly. Contact the Project WILD office for a free copy. Supplies are limited.

### Feathers Available

For NO WATER OFF A DUCK'S BACK, we have feathers for you to use. Joel Huener, waterfowl biologist, keeps us well supplied. Call if you need some (801 538-4719)!

### More on Composting

For a brochure with step-by-step instructions on starting your own home compost pile, send a self-addressed, stamped, business-size envelope to Home Composting Brochure, Department MM, P.O. Box 290, Holmdel, NJ 07733.

### Study Tracks with New Computer Program

Thanks to Colorado's Project WILD, we have the perfect computer supplement to the WILD activity TRACKS. Program consists of a visual review of selected tracks, including pictures of the animals with natural history information, and two matching games.

Program runs on IBM compatible computers with a VGA monitor. We will have copies of the disk available when you check out the replitracks, or we'll make a copy for you if you send a 3 1/2" or 5 1/4" High Density disk already formatted for IBM compatible computers to Project WILD, 1594 West North Temple, Ste. 2110, Salt Lake City, UT 84116.

### Winter Coyote Poster

From New Mexico Game and Fish Department, we have a limited quantity of posters featuring a coyote in the snow. Call the Salt Lake office (801 538-4719) to request one for your classroom.

## Geoguide to "Dolphins in Crisis" from *National Geographic*

Available from the Project WILD office, this 4-page lesson plan supplements the Geoguide page in the September 1992 *National Geographic* magazine. Students use activities in geography, science, math, language and creative writing to investigate dolphin natural history. Suggested grade level is 4 - 8. Ideas are offered for evaluation and extension activities. Includes a resource list. Teachers are encouraged to copy materials in the lesson plan for use in the classroom. We have reprinted one of the activities below which works well with PLASTIC JELLYFISH and TURTLE HURDLES.

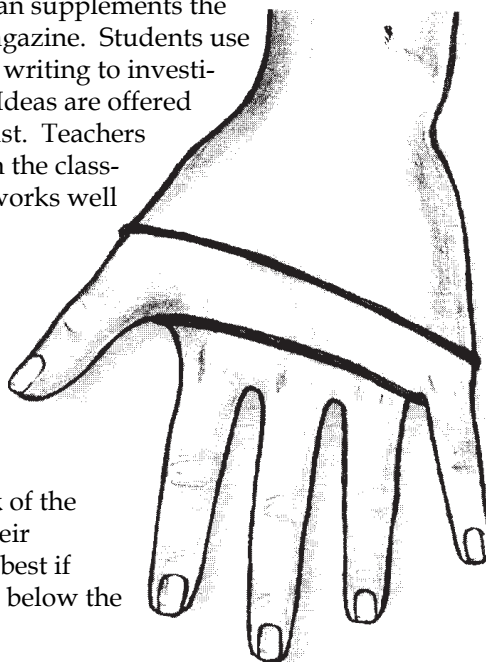
### Net Results

**THEME:** Human/Environment Interaction

**OBJECTIVE:** To experience a sense of entrapment similar to that of animals caught in nets

**MATERIALS:** Rubber bands

**PROCEDURE:** Have students stretch a band across the back of the hand. Without touching any other part of their body with their "trapped" hand, students try to wriggle free. Activity works best if rubber band fits snugly across the hand and is stretched well below the knuckles as shown in the diagram.





## Watchable Wildlife -- From A Distance

Winter range areas can offer great wildlife viewing opportunities.

Advise your students to use binoculars or spotting scopes, watching the animals from a safe distance so as not to disturb them. Remind your students that the animals are carefully trying to conserve energy and that unnecessary movement causes the animals to lose valuable energy resources.

The Project WILD activity TOO CLOSE FOR COMFORT may be adapted easily to reinforce this concept of energy gain and energy loss which is so critical to all animal species.

## Comments on Comments

*We loved hearing from you. In the last issue of Growing Wild we purged our mailing list. Comments were returned with correct addresses. All comments were encouraging and positive. Several people wanted more activities directed toward secondary students. And a few teachers wanted more kindergarten activities. We are working hard to accomodate all grade levels.*

*There were a few letters asking us to provide an opportunity to network with other WILD teachers. We are looking into several options on networking. Send your ideas. We encourage you to write or call anytime.*

*Growing WILD, Utah's Project WILD newsletter, is written by Brenda Schussman and Bob Ellis, Coordinators, Project WILD. Eagle activities were written and illustrated by Ellen Petrick-Underwood. Growing WILD illustrations are by Jill Rensel. Nature's Call was written by Brenda Schussman and illustrated by Jill Rensel. Content on winter range was reviewed by Wes Shields, Big Game Program Coordinator. Project WILD is sponsored by Utah Division of Wildlife Resources, 1594 West North Temple, Ste. 2110, Salt Lake City, UT 84116 (801 538-4719).*



*All that summer conceals, winter reveals. --Annie Dillard*